NORTHERN NOVELTIES for 1926

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Printed January 27, 1926, by the South Dakota State Horticultural Society.

Prof. N. E. Hansen is standing under a tree of the Harbin Pear, in North China, 1924.

MY SEARCH IN 1924 FOR HARDY PEARS IN THE MOUNTAINS OF NORTH CHINA

By Prof. N. E. Hansen, State College, Brookings, South Dakota.

The modern standard pear, **Pyrus communis,** is a native of temperate Europe and western Asia. In ancient Greece we find the first records of the pear as a cultivated plant. The main development of this species we owe to Belgium, in which country Van Mons stands out as the most prominent worker. Van Mons was born in 1765 and died in 1842. His theory was to grow as many seedlings as possible under cultivation and select the best as the parents for the next generation. He carried the pear through about five generations and at one time had 80,000 seedlings in his nursery. Van Mons distributed some 400 varieties, of which about 40 are still under cultivation.

However, this great work of Van Mons will not help us directly because the species is very susceptible to fire blight. Fire blight is a bacterial disease native of North America but not found in Europe or Asia. The work of Van Mons and other pear breeders can help us only through hybridization of their best pears with pears of other species resistant to blight which are found mainly in northeastern Asia. These choice west European pears suffer also from winter-killing here in the prairie Northwest. These are raised on a large commercial scale on the Pacific Coast and also on the Atlantic Coast, but the greatest danger always is fire blight, which sometimes wipes out whole orchards in a short time. Some of the Russian pears are hardy against winter-killing but suffer from the blight.

The Manchu Chinese are bringing in the pears to Prof. N. E. Hansen.

On my former five trips to Russia in 1894, 1897, 1903, 1908-09, and 1913, I looked into the pear question carefully. In parts of North China, especially Manchuria and North Korea, Siberia and East Siberia we find **Pyrus ussuriensis** which is very hardy against winter-killing and offers much strong resistance to pear blight. Farther south in China there are other species of pears which are resistant to pear blight but not against winter-killing. Specimen trees from these various trips and also some brought over by Frank N. Meyer, Agricultural Explorer for the U. S. Department of Agriculture, all gave promise. Professor F. C. Reimer of the Oregon Agricultural College made two tours to China to gather pear seed for the Pacific Coast. But my plan was to go much farther north and west of all these places to trace the northwest limit of the pear if possible. The element of winter hardiness is not so much of a factor on the Pacific Coast as it is here in the prairie Northwest. I thought I could save at least fifty years time by going where I could study these variations in pears. These pears of western Asia have been studied in the Arnold Arboretum of Boston, Massachusetts, by Alfred Rehder, including material brought over from Korea by Dr. E. H. Wilson, Assistant Director of the Arboretum. My 1924 tour is the first attempt to find the real northwestern limit of the pears, from the climatic standpoint. In 1921 at Brookings I spent $150 and $80 the next winter in importing Pyrus ussuriensis seed through commercial sources. This seed came from Liaoyong, southern Manchuria, where the climate is much milder. It was thought this came from Korea, but really it was from southern Manchuria further southwest toward Pekin. I have tested pear seedlings from France, Japan and other regions but none proved hardy.

The Chinese carried the pears several miles over footpaths in the mountains.

Prof. N. E. Hansen selecting pears in the mountains of North China, 1924.

I left Brookings July 26, 1924, on my sixth tour to foreign lands in search of new seeds and plants, and returned October 17, 1924. The tour was from Seattle to Japan and through Japan to Korea, southern Manchuria via Mukden, and north to Harbin on the Siberian Railway where I made my headquarters. From Harbin I went east and west on the Chinese Eastern Railway which forms a part of the Siberian line for nearly a thousand miles. I found the western limit of the pear a few miles east of Harbin. I went from village to village in the mountains and got the Chinese to bring in the pears as they ripened. The main work was in the region about fifty miles east of Harbin. The Chinese cut down other timber in the mountains but leave the pear trees as they furnish an annual supply of food. From many thousand pounds of pears I picked the best for special selection work. I hope to carry these pears through several generations, as was done at the time of Van Mons but utilizing the latest improvements both in theory and technique.

I went west to the Soviet boundary at the station Manchuli, also called Manchuria. This is where the Russian and Chinese custom houses are located on the boundary and is in a very sandy region. It is practically an arm of the Gobi Desert extending across the Siberian Railway. Here there are no pears. But a few miles farther east in the Great Khingan Mountains I made a rough mountain climbing tour and gathered some wild relatives of the peach and almond which I hope will be useful for experimental work.

The entire tour in the mountains along the Siberian Railday was in a region infested with Hung Huitsi, or Chinese bandits. The Chinese War broke out very soon after I arrived and many thousands of soldiers were sent farther south, toward Pekin. From Mukden to Pekin the railway was taken over so I could not return via Pekin. The only way was to go back the same way I came, through Korea and Japan.

HARBIN PEAR

Pyrus Ussuriensis is the pear of northern Korea and Manchuria and also the Pacific Coast of Siberia, approximately from Vladivostock to the Amur River. It varies much from seed. In my 1924 tour to North China I gathered seed from many thousand pounds of the fresh fruit, gathered in the mountains of North China, in a region approximately fifty miles east of Harbin which is very near the western limit of this species. In this region the temperature ranges to about 47 degrees below zero F. The fruit of the largest pears is 2½ inches in cross diameter and 2 inches in long diameter. The fruit varies in shape but is mostly rounded, tapering toward the stem. The foliage becomes ornamental in fall, owing to the bright red and yellow coloring. I believe they will be hardy enough for street and lawn trees at the far North. The term, Harbin Pear, is now given to this importation to distinguish it from importations of uncertain or more southern origin. This new material should be utilized in three ways:

1. Seedlings should be planted out for fruiting to provide hardy blight-resistant nursery stocks for the new hybrids which are coming on.

2. The fruit may be improved in size and quality by seedling selection through several plant generations.

3. As rapidly as possible these pears should be hybridized with the large, fancy-flavored pears from west Europe.

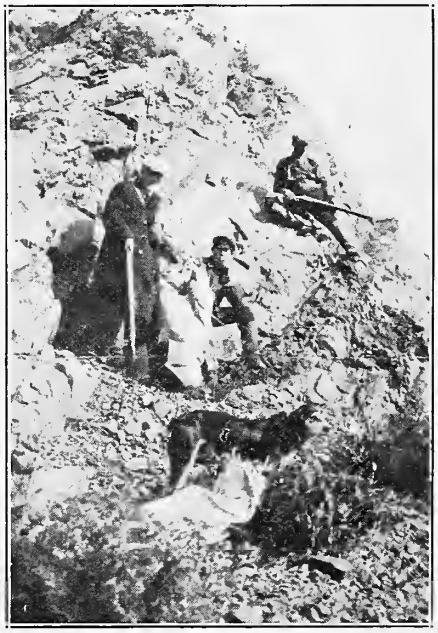
There is much room for improvement in the flesh in flavor but it furnishes the best starting point that I know of for hardy pears strongly resistant to blight and hardy far north. As soon as possible we should combine the winter hardiness and blight resistance of this Siberian pear with the large size and fine quality pears of west Europe. This would make it possible for many northern states to grow pears where it is not possible at the present time. This pear is much used for food by the native Manchu Chinese. The flesh is white, juicy, with much grit. The fruit ripens late and keeps well, at any rate until late in the fall.

Price of Harbin pear, one year old seedlings, 3 for $1.00.

MUGDEN PEAR

Offered for the first time. This name is given to seedlings of a small, early, yellow pear about 1½ inches in diameter which I found on my 1924 trip shipped in large quantities from further south into Harbin, Manchuria. The trees, it was said, are very early in bearing. The fruit is so cheap and abundant that it is eaten very freely by the native Chinese. This will probably not be hardy far north but is more for the latitude of Nebraska and Iowa. It was impossible at the time to determine the exact origin of these pears. Mukden is the chief city of South Manchuria. The fruit ripens much earlier than the local native pears of the Harbin region. The fruit, while small, is juicy and of pleasant flavor, although as far as I know, none of these oriental pears have the high spice of the best pears of west Europe.

Price of one year old seedlings, each $1.00.



Prof. N. E. Hansen and party in the Great Khingan Mountains, North China, 1924.

MANCHU WALNUT

Offered for the first time. The local Harbin form of the Manchurian Walnut, **Juglans Mandshurica**, Maxim. The nuts are larger than those illustrated in Bailey's Encyclopedia of Horticulture under this species. Grown from native seed which I obtained at Harbin, China, in 1924. We can spare a few one year seedlings, each $2.00.

MANCHURIAN CRAB

These are seedlings of **Pyrus baccata, var., Mandshurica,** Maxim, a form of Siberian crab grown from seed gathered by Prof. N. E. Hansen in 1924 in the mountain region, about fifty miles east of Harbin, Manchuria. The small fruit varies in size; tree is of somewhat stronger growth than the ordinary Siberian wild crab and for that reason is worthy of testing as a stock. The tree is quite ornamental, heavily branched in the open but grows taller when crowded by other trees in the forest.

Small one year seedlings, 10 for $1.00; $5.00 per 100.

Sungari Grapes, a few miles east of Harbin, 1924.

SUNGARI GRAPE

This is **Vitis amurensis, Rupr.,** a wild grape found in great profusion in the mountains, beginning a few miles east of Harbin, North China, on the Siberian railway and extending east to the Pacific Ocean. The fruit is brought in large quantities to the towns along the Siberian railway. The wild-flavored berries are somewhat larger than our wild grapes. Some of the berries are 5-8 inches in diameter; color, purple black. In autumn the foliage becomes very ornamental with purple and red tints, so that this grape should be well adapted for arbors. These plants are one year seedlings grown from seed collected by N. E. Hansen a few miles east of Harbin, North China, in 1924. Harbin is located on the Sungari River, the chief river of this region.

Price of Sungari grape seedlings, one year old, 2 for $1.00.

MANCHURIAN MUSKMELONS

In my 1924 search for pears along the Siberian railway in North China, I secured many small samples of Chinese Muskmelons and other vegetables. Their extra early muskmelons interested me. Some are so thin skinned that the natives eat the skin and all as one would eat an apple. There is no land available at Brookings for developing all these interesting vegetables and I am not sure that any of them will find favor in American markets. However, in the hands of melon-breeders the muskmelons might be of value from the plant-breeding standpoint as a starting point for new varieties. Those especially interested may obtain small packets of about 10 seeds each at 25c per packet. For convenience the seeds will be numbered Harbin No. 1, 2, 3, etc. It is not possible to trace the exact origin. In China varieties are local in distribution. What is grown in one region may not be found in the next region only a few miles away.

CHANG PEAR

Offered for the first time. I grew this seedling from fruit grown on our trees of Pyrus Simoni, a Chinese wild pear received many years ago from the Arnold Arboretum, Boston, Massachusetts. The original tree bore fruit in 1923 and 1924. Fruit, clear yellow, oblong pyriform; flesh, white, firm, juicy. As described in South Dakota Bulletin 159, further investigations by Alfred Rehder at the Arnold Arboretum divide the species so that the tree is now called Pyrus Ovoidea. The bright red leaves in autumn are attractive. The first fruits of this select seedling pear, Chang, are 1¾x2¼ inches in diameter and of fair quality. A few trees of the Chang Pear can be spared, one year buds on commercial Pyrus Ussuriensis stocks, price, each $1.00. Our experience here at Brookings indicates that the ordinary commercial Pyrus Ussuriensis stocks winter-kill readily, so these trees should be mulched carefully in winter to prevent root-killing. Chang is a Chinese name.

SIMOLA PEAR

Offered for the first time. Fruit yellow, acute pyriform with a long stem; the first fruits are 2x2½ inches in diameter. The original tree is of tall upright habit and fruited in 1923 and 1924. Pedigree: Pyrus Simoni x Marguerite Marillat pear pollen. The name Simola is made up these two names. The original Pyrus Simoni trees were received from the Arnold Arboretum, Boston, Massachusetts, many years ago. The juicy, pleasant flavored fruit is somewhat larger than the typical Simoni. Price of Simola pear, one year buds on commercial Ussuriensis stocks, each $1.00.

TEGALA ROSE

Offered for the first time. This attractive deep pink rose blossoms very freely in June, and is semi-double much like the Tetonkaha Rose, but more dwarf in habit. The plants offered are all sprouts from one original plant. Growth up to about 4 feet in height without pruning. Pedigree: Tetonkaha x Rosa gallica grandiflora pollen. The name Tegala is made up from these two names. The accent is on the second syllable.

Price of small plants, sprouts from the original stock, each $1.00.

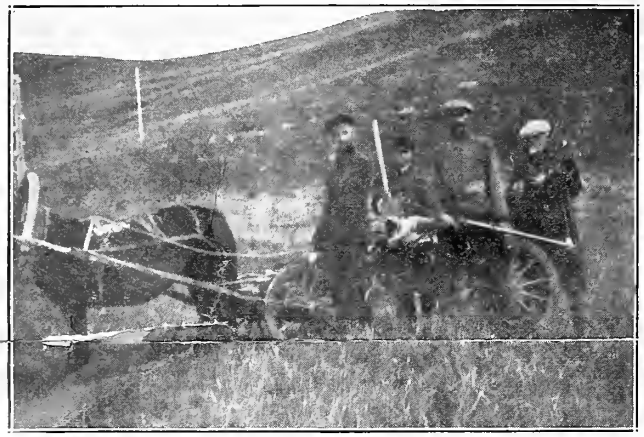
GLADIOLUS

The best summer bulb for the garden. At the 1921 State Fair at Huron, this Department exhibited over 2,000 spikes in 150 choice named varieties. The following four years the assortment included over 500 varieties and the entire wing of the Horticulture Building at the State Fair at Huron was transformed into "The Fairyland of Flowers." The present collection in this Department includes over 1,100 varieties, one of the largest in the country. None of these named varieties are for sale, but 16 assorted bulbs without names will be given as a free premium with one annual membership in the South Dakota State Horticultural Society.

HANSEN WHITESEED ALFALFA

Offered for the first time. In my spring list for 1917 Hansen's Whiteflowered Alfalfa was first introduced. It soon became evident that some of these had white seeds also. In 1921 my white-seeded and white-flowered alfalfa was announced, but was not ready for distribution. Since then many inquiries have been received for seed. In the beginning I had over 40,000 white-flowered alfalfa plants, but how to breed this color true, both as to flower and seed, has been a problem. This would be desirable as the farmers would know before sowing what they are getting. So far as I know this is the first alfalfa with a definite trademark—an easily distinguished characteristic for the protection of the purchaser. Both seed and flower are white. The pedigree indicates hardiness sufficient for all practical purposes, even far to the North and for dry uplands. But this must be determined by actual comparative field trials with other varieties. The work of selection is not yet completed. I now have 396 plants in the field all with white flowers and white seed and all grown from seed of plants bearing white flowers and white seeds. These individual plants are all of strong and vigorous growth and productive of seed and forage, but no comparative tests have been made with other varieties. They are all descended from the yellow-flowered Siberian alfalfa, which I brought from Omsk, Siberia, in 1906, grown closely adjacent to the Cossack. The Cossack alfalfa started with a half teaspoonful of seed which I brought from Russia in 1906. It is now grown by the thousands of acres in western South Dakota and other states. It is well known that a field of Cossack is well marked by its light colored variegation, from blue clear through to yellow and even to clear white; in fact, a field of Cossack shows many white-flowered plants.

A few plants of Hansen Whiteseed Alfalfa will be grown from cuttings and sent out as potted plants in time for outdoor planting in spring. Orders should be in by March 1. Price of potted plants packed ready for shipment, 3 for $1.00 These plants should be planted as far as possible from other alfalfas to prevent cross-pollination. Try selfing some of the flowers with a toothpick.



Prof. N. E. Hansen and party starting for the Great Khingan Mountains, North China, 1924.

SPECIAL OFFER—DOUBLE VALUE FOR YOUR MONEY

The Legislature has made this Society the Department of Horticulture for South Dakota and has fixed the price of annual membership at $1.00. The reports are published by the state, but aside from the State Official List ,the report is sent only to members. This provides a fund to help pay the running expenses of the Society.

The Society wishes to increase its membership.

As a free premium, select One Dollar's worth of seeds, plants or trees from the foregoing list. The order must be received before April 1, 1926. As the supply of some of these premiums is very limited, mark your second choice. One of the annual reports will be sent you at once. One book and one free premium amounting to One Dollar, will be sent postpaid for each $1.00 received. Here is a good chance to get a valuable library of books on South Dakota trees, fruit and gardening, as well as some choice new fruits for the garden.

After April 1, 1926, the only premium available will be one of the old annual reports. This will be sent without further notice. There will be no duplication, because our card index records show just what reports have been sent out to everyone who has ever been a member of the Society.

LIFE MEMBERSHIP

The life membership is fixed by the Legislature at Ten Dollars. It is highly desirable that the Society has more life members as they are our permanent source of strength and influence. Those who become life members may select $10 worth of trees, plants, seeds or other premiums from this circular as a free premium. This includes a set of the annual reports now issued, as far as available, and one annual report as issued. All premiums sent by express at customer's expense. Address Prof. N. E. Hansen, Secretary.

In place of seed and plant premiums, the following are offered. Select ONE of the following list for each annual membership.

No. 1—One back volume of the Annual Report of this Society.

No. 2—Prof. Green's Vegetable Gardening, 246 pages, paper cover.

No. 3—Prof. Green's Popular Fruit Growing, 323 pages, paper cover.

No. 4—Evergreens, "How I Grow Them," 95 pages, by C. S. Harrison, and "Windbreaks and Shelter Belts," 69 pages, paper cover, by the late Prof. S. B. Green, University of Minnesota.

TERMS: Cash with order. Positively no credit given, except to Government Experiment Stations. No orders booked until paid for. No plants sold in less than the quantities specified. Address:

PROF. N. E. HANSEN,
Experiment Station, Brookings, South Dakota.

EARLIER INTRODUCTIONS

Of my earlier introductions, some one year old budded trees all at $1.00 each will be available as per the following list. These have all been described in earlier catalogs which will be sent on application:

Apples: Anoka, Chinook, Russian White.

Crab Apples: Dolgo.

Plums: Waneta, Kaga, Opata, Hanska, Sapa, Tawena, Pembina. **Cherry:** Oka, Tom Thumb.

Ornamentals: .Stanapa Purple Leaf Sand Cherry; Cistena Purple Leaf Sand Cherry; Boughen Chokecherry; Spearfish Yellow Chokecherry; Hopa Red-flower Crab.

Gooseberries: Rooted layers, $1.00 each: Kataga, Kopa, Kazonta, Kapoza.

Grapes: Of varieties listed in last year's list. Cuttings only, 25c each. No grape vines ready this year. Most of the cuttings will be reserved for use in experimental work with a new grape-grafting machine just received from France.

Alfalfas: Cossack and Semipalatinsk, seed from the original stock, per packet 50 cents.

Proso: Seed of Hansen Proso (grain millet) postpaid, 2 lbs. for 50c. Price for larger lots upon application.

Siberian White Sweet Clover: Seed of Hansen clover (renamed Arctic clover in Canada) per packet, 50c.

MORE LAND NEEDED

More land at Brookings is still needed as that is where the seed is germinated and given nursery care until large enough to transplant to the State Orchards in other parts of the state. A few years ago the South Dakota Legislature furnished for my experiments the largest fruit-breeding greenhouse in the world. This made possible the Hansen Hybrid Plums, such as Opata and Waneta, and a long list of other fruits. But now I need more land to keep up the good work. The state of South Dakota should have the largest fruit breeding farm in the world, because it is necessary to complete the work already planned and to provide for future growth. Such a farm would insure the rapid development of an entirely hardy list of fruits and ornamentals for the prairie Northwest. Will you help realize this, my hope?

NECESSARY EQUIPMENT FOR ORIGINATING HARDY FRUITS

The long list of hardy plums and other fruits introduced by this Department was made possible by the fruit-breeding greenhouse given to State College a few years ago by the South Dakota State Legislature. But the work now under way has greatly outgrown this house. In order to prevent any check in the development of this work a new fruit-breeding greenhouse should be provided. The word "greenhouse" does not give the right idea. This is really a laboratory for originating new fruits. A large cellar and cold storage building for the storage of fruit trees and fruits is also needed.

GREETING FROM DR. N. E. HANSEN

This list offers what is ready from my thirty-first year of experiments in originating new fruits at this Station. Much more remains to be done. Many more varieties worthy of trial are coming on. To the friends in many states who have shown their cordial interest in the work by sending in orders, I extend my hearty thanks. The money received from the sale of plants makes possible the fruit-breeding work on a larger scale than would otherwise be possible.

Many of these new varieties are offered only once or twice as there is not enough land for nursery propagation. The available stock is so limited that only by early orders are you sure of getting what you want. So please order promptly.

As this Department does not run a commercial nursery, the standard varieties of fruits and ornamentals are not offered.

PROF. N. E. HANSEN,
Experiment Station, Brookings, South Dakota.